FIG.1

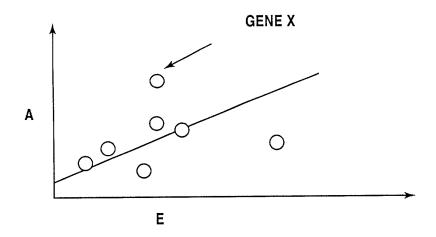


FIG.2

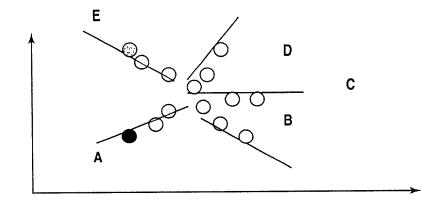
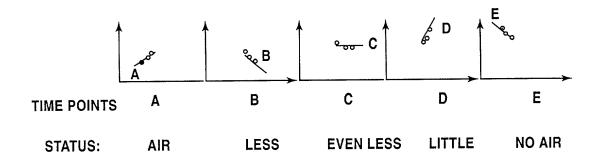


FIG.3



### FIG.4

| <b>Please</b> | , log in     |
|---------------|--------------|
|               | array SCOUT™ |
|               | Login        |
| lion          |              |
|               | Password     |
| ***           |              |
|               | Account      |
| lion          |              |
|               | OK Cancel    |

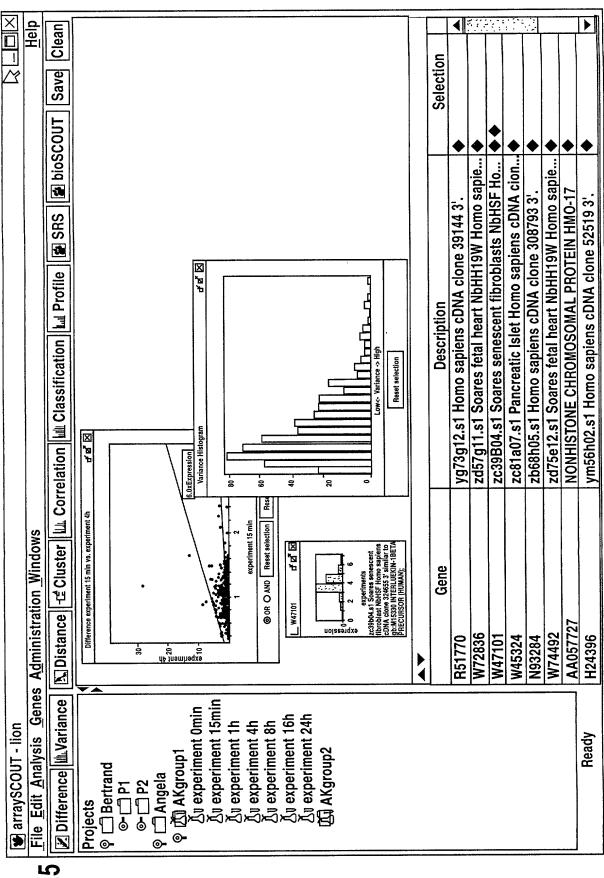


Fig.5

Fig.6

| 省 aı             | ray SCOUT                 | - kull |          |                         |                 |
|------------------|---------------------------|--------|----------|-------------------------|-----------------|
| <u>F</u> ile     | <u>E</u> dit <u>A</u> nal | ysis   | Genes    | A <u>d</u> ministration | <u>Wi</u> ndows |
| 19.00            | Difference                |        | /ariance | Distance                | -佳 Cluste       |
| Proje            | cts                       |        |          |                         |                 |
| <br> <br> <br> - | New                       |        | Pro      | oject N.                |                 |
| 아<br>-           | Del                       |        | Ex       | periment Group          |                 |
| •                | Annotat                   | е      |          |                         | <del>'</del>    |
|                  | List                      |        |          |                         |                 |
|                  | Add/Ren                   | nove   |          |                         |                 |
|                  | Permiss                   | ions   |          |                         |                 |
|                  |                           |        |          | 1 : 1                   |                 |

Fig.7

| (E) Input |  | X |
|-----------|--|---|
| 80        | Please input a project name TutorialAK |   |
|           | OK Cancel                              |   |

Fig.8

| <b>選</b> Input | ×                                       |
|----------------|---|
| 2              | Please input an experiment project name |
|                | Fibro 1                                 |
|                | OK Cancel                               |

Fig.9

| Select experiment   | ts to add or remove | ×               |
|---|---------------------|-----------------|
|   | Group 2             |                 |
| · •   | Experiment Class 59 | 92              |
| fibro_0HR.rdb fibro_15MIN.rdb   |                     | fibro_UNSYN.rdb |
| fibro_30MIN.rdb<br>fibro_1HR.rdb<br>fibro_2HR.rdb<br>fibro_4HR.rdb<br>fibro_8HR.rdb | >>Remove>>          | ·               |
|   | OK Cancel           |                 |

Fig.10

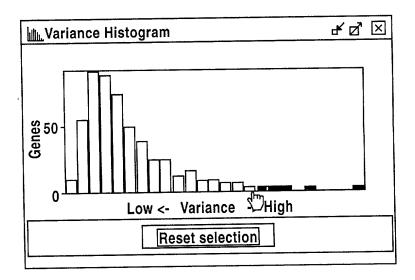


Fig.11

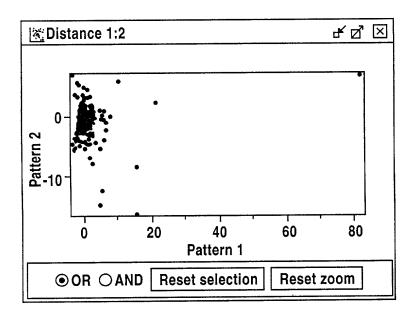


Fig.12

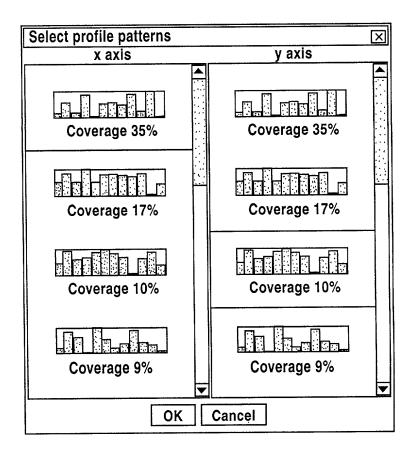
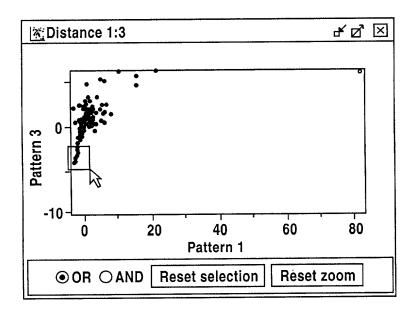
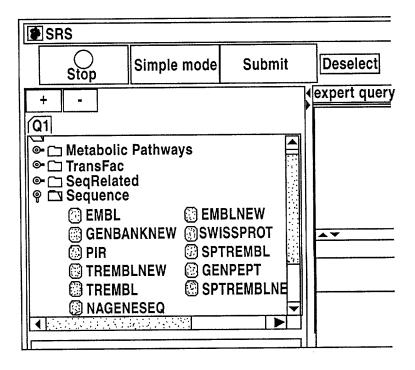


Fig.13



**Fig.15** 



| ☐·          | (F)::  | 4  |  |  |  |  |  | <b>I</b>  |
|-------------|--|--|--|--|--|--|--|---|
| Selected in |  |  |  | Select (Ctrl+Enter)                          | Heset selection (Ctrl+R)                         | Show profile(s) (Ctrl+P)   |  |   |
|             | <b>♦</b>   | •  | <b>•</b>   | <b>•</b>                                     | <b>♦</b>   | <b>*</b>   | <b>*</b>   | <b>.</b>  |
| Description | zd71h04.s1 Soares fetal heart NbHH19W Homo sapie | yf72g12.s1 Homo sapiens cDNA clone 28051 3'. | zh83b05.s1 Soares fetal liver spleen 1NFLS S1 Homo   ◆ ◆ | yg20c12.s1 Homo sapiens cDNA clone 32811 3'. | zf09a02.s1 Soares fetal heart NbHH19W Homo sapie | ye42c02.s1 Homo sapiens cDNA clone 120386 3'. Show profile(s) (Ctrl+P) | yl61g03.s1.Homo sapiens cDNA clone 162772.3' simi ◆◆ | ze76h08.s1 Soares fetal heart NbHH1 9W Homo sapie ◆ |
| Gene        | W72759   | R40626                                       | AA001916   | R43728                                       | AA041370   | 195837   | H27557   | AA024572  |

Fig.16

|         | Stop                             | Simpl                                   | le mode     | •  | Subm              | it  |
|---------|----------------------------------|---|-------------|--|-------------------|-----|
| + Q1 ys | -                                |   |             |  |                   |     |
| EW<br>W | EMBLNEV SWISSPRO SPTREMB GENPEPT | OT<br>IL                                | S<br>R<br>G | ENBAN<br>WISSNI<br>EMTRE<br>ENPEP<br>AGENE | EW<br>MBL<br>TNEW | 1   |
| Q 🕶     | <u> </u>                         | · ; · · · · · · · · · · · · · · · · · · |             |  | · [ ]             |     |
| Des     | cription 🔻                       | cyclin                                  |             |  | 1                 | -1- |

Fig.17

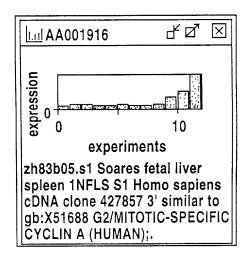


Fig.18

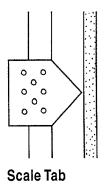


Fig.19

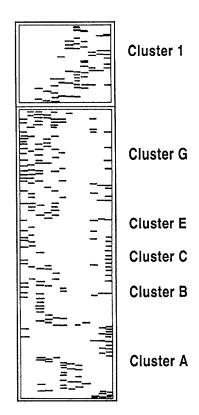


Fig.20

#### **Projects**

- Bertrand
- 🕒 🧰 fibroblast data
- Fibroblast Project
- 🕒 📠 Illico Presto

#### Fig.21

Experiment group 1

Experiment 0 min

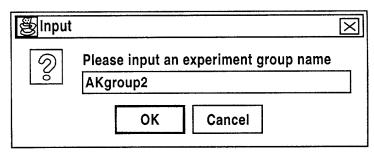
experiment 15 min

experiment 30 min

experiment 1h

experiment 2h

Fig.22



Experiment group name dialog box.

Fig.23
Choose experiment class dialog box.

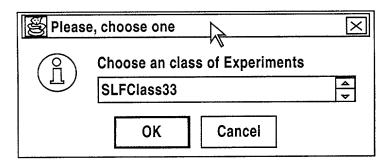
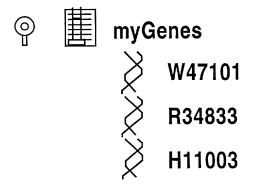


Fig.25



Add/Remove dialog box for adding and removing experiments from experiment groups.

| Select experiments to add or remove                            |  | X   |
|--|--|---|
|  | AKgroup1   |   |
| experiment 0 min experiment 15 min experiment 1h experiment 4h | < <add<<< td=""><td>experiment 30 min<br/>experiment 2h<br/>experiment 6h<br/>experiment 12h</td></add<<<> | experiment 30 min<br>experiment 2h<br>experiment 6h<br>experiment 12h |
| experiment 8h<br>experiment 16h<br>experiment 24h              | >>Remove>>   | experiment 20n<br>experiment unsync                                   |
|  | OK Cancel  |   |

The annotation editor.

| Annota | tion editor   | Ī  |
|--------|---|----|
| lion   |   | =7 |
| Angela | edit your comment here                                |    |
|        | last updated: 10:25:56 GMT+01:00 on 12. November 1999 |    |
|        | OK Cancel   |    |

Fig.27
The permissions dialog box for project "Angela".

| <b>Modify</b> | permission | ons for "A | ngela"  |        |             |       | X       |
|---------------|------------|------------|---------|--------|-------------|-------|---------|
| User          | READ       | WRITE      | EXECUTE | Group  | READ        | WRITE | EXECUTE |
| lion          | X          | X          | X       |        |             |       | ·       |
| weiss         |            |            |         |        |             |       | 1       |
| fabre         |            |            |         |        |             |       |         |
| schnecke      |            |            |         |        |             |       |         |
| test          |            |            |         |        |             |       |         |
| lefranc       |            |            |         |        |             |       |         |
| munro         |            |            |         |        |             |       |         |
|               |            |            |         |        |             |       |         |
| L             |            |            |         |        | <del></del> |       |         |
|               |            |            | OK      | Cancel |             |       |         |
|               |            |            |         |        |             |       |         |

Fig.28
Select parameters "Data Scaling" dialog box.

| *           | Select | parameters ×   |
|-------------|--------|--|
| Data Scalin | g      | no scaling logarithmic adjust shift (avg=0) adjust scales (sd=1) |
|             | ОК     | Cancel   |

Fig.29

The Choose experiments dialog box.

| Please, choose the experiments to compare |                  |   |        |                   |   |  |  |
|---|------------------|---|--------|-------------------|---|--|--|
| x axis                                    | experiment 0 min | • | y axis | experiment 15 min | • |  |  |
|   | ОК               |   | Cance  | ı                 |   |  |  |

Fig.30
An example difference plot.

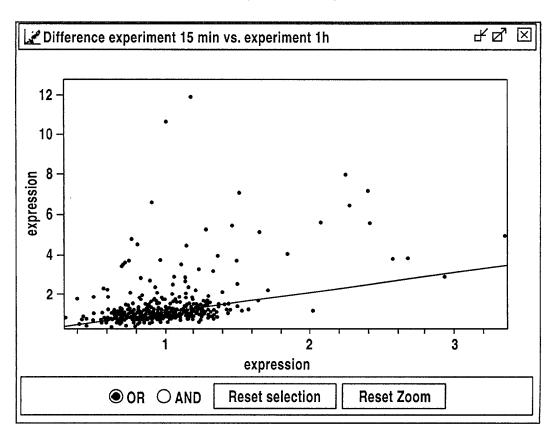


Fig.31

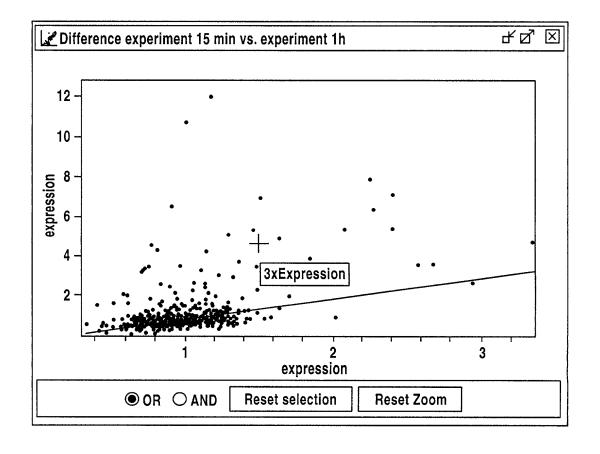


Fig.32

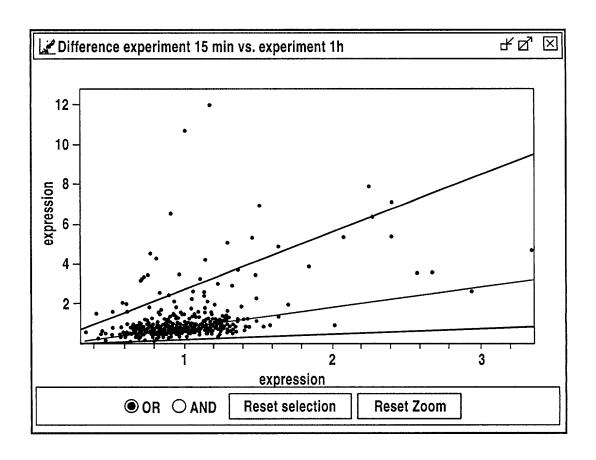


Fig.33
Select Profile Patterns dialog box.

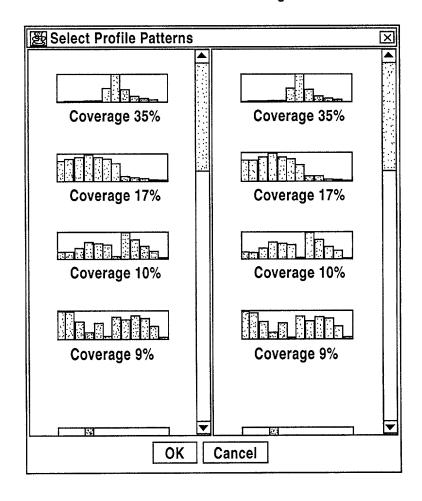


Fig.34

Gene profiled in Fig.35
Distance Plot created with the adjust shift (avg=0) scaling procedure and the patterns displayed in Fig.33

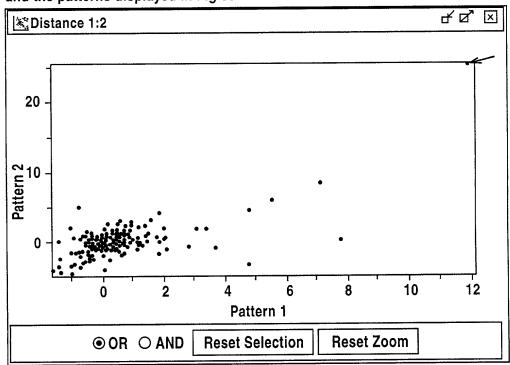
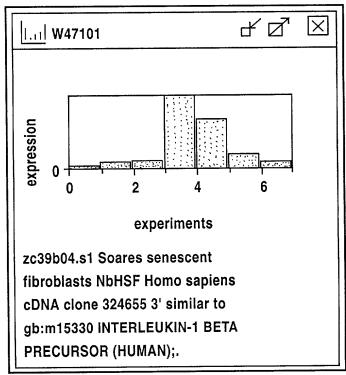


Fig.35



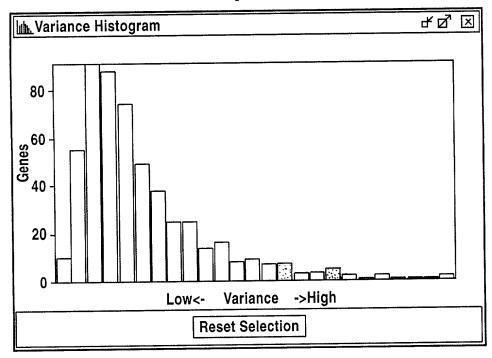
Gene Profile of gene W47101 plotted at (12,26) in the above Distance Plot (Figure 34).

Fig.36

The "Select Experiments to plot" dialog box for the variance histogram.

| Select Experiments to plot × |                                       |         |  |  |  |  |  |
|------------------------------|---------------------------------------|---------|--|--|--|--|--|
| Experiment                   | Include                               | Exclude |  |  |  |  |  |
| experiment I                 |                                       |         |  |  |  |  |  |
| experiment II                | £2.585                                |         |  |  |  |  |  |
| experiment III               |                                       |         |  |  |  |  |  |
| experiment IV                | 3.2.2.                                |         |  |  |  |  |  |
| experiment V                 | 2524                                  |         |  |  |  |  |  |
| experiment VI                | 1.57.                                 |         |  |  |  |  |  |
| experiment VII               | \$\$\frac{1}{2}\$\text{\$\lambda\$}\$ |         |  |  |  |  |  |
| ОК                           | Cance                                 | el      |  |  |  |  |  |

**Fig.37**The Variance Histogram with two bars selected.



**Fig.38**The "Enter Correlation Values" dialog box.

| Experiment   | Target Value |          |
|--|--------------|----------|
| the state of the s | 190          | 1        |
| experiment 0 min   |              |          |
| experiment 15 min  |              | <u> </u> |
| experiment 30 min  |              |          |
| experiment 1h  |              |          |
| experiment 2h  |              |          |
| experiment 4h  |              | 1        |
| experiment 6h  |              | 1        |
| experiment 8h  |              |          |
| experiment 12h   |              | 10.0     |
| experiment 16h   |              | 1        |
| experiment 20h   |              | 1        |
| experiment 24h   |              | 1        |
| C  | Cancel       |          |

Fig.39

Correlation histogram parameters dialog box.

| Select parameters × |   |  |  |  |
|---------------------|---|--|--|--|
| Target Scaling      | no scaling logarithmic range unit range |  |  |  |
| Comparison Method   | by Shape (Pearson) by absolute values   |  |  |  |
| ОК                  | Cancel                                  |  |  |  |

Fig.40

A correlation histogram created using the "no scaling" and the "by Shape (Pearson)" parameters.

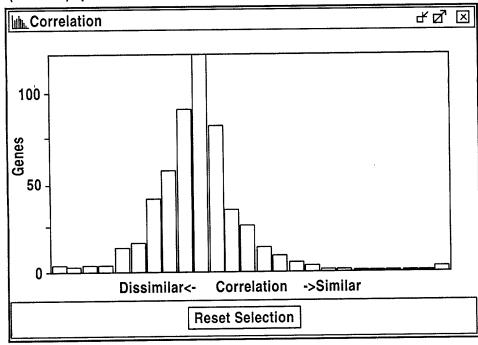
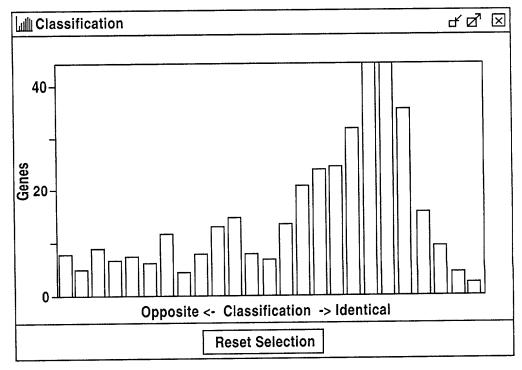


Fig.41

The "Classify Experiments" dialog box.

| Classify Experim | ents     |          | X       |
|------------------|----------|----------|---------|
| Experiment       | Positive | Negative | Exclude |
| WT, liquid (ave) |          |          |         |
| WT (ave)         |          |          |         |
| WT, solid (ave)  |          |          |         |
| KO (ave)         |          |          |         |
|                  | ок       | Cancel   |         |

Fig.42



The Classification histogram created using the "adjust scales" scaling procedure and the data displayed in the "Classify Experiments" dialog box above (Figure 41).

Fig.43
Select reference state dialog box.

| Select parameters |                     | $\times$ |
|-------------------|---------------------|----------|
|                   | Mean of Experiments |          |
|                   | experiment I        |          |
|                   | experiment II       |          |
| Reference State   | experiment III      |          |
|                   | experiment IV       |          |
|                   | experiment V        | ▼        |
| ОК                | Cancel              |          |

Fig.44

The Cluster Tree analysis view.

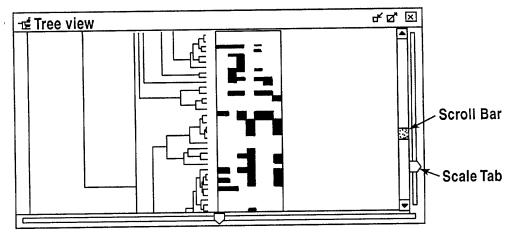


Fig.45

The SRS Interface In Simple Mode.

| <b>₩</b> SRS   |  |                      |         |                                     |  | ச்ச் ৈ⊠     |
|--|--|----------------------|---------|-------------------------------------|--|-------------|
| Stop   | Detail<br>mode                               | <u>S</u> ubmit       |         | Deselect                            |  |             |
| Query on path  | way  |                      | QL      | iery on swisspi                     | ot alone   |             |
| Query on swis  |  |                      | Nu      | m Db                                | ID   | Description |
| retrieve possik<br>retrieve sequer<br>search mutatio | ole human sec<br>nces with nuc<br>n database | quences<br>leotide b | 1 2 3 4 | SWISSPROT<br>SWISSPROT<br>SWISSPROT | AC01_YEAST<br>ACR1_YEAST<br>ACR3_YEAST<br>ADB1_YEAST<br>ACK FORW | ARD         |

| ×     |                |                          |          | 1                    | 31   |                         | <b> </b>    | $\prod$               |  |                      | 4           | 5333                 |                             |                 |   |   |   |                 | •  | ] |
|-------|----------------|--------------------------|----------|----------------------|--|-------------------------|-------------|-----------------------|--|----------------------|-------------|----------------------|-----------------------------|-----------------|---|---|---|-----------------|--|---|
| - 1   |                |                          |          |                      | 1 37   |                         |             |                       | \ST]   |                      |             |                      |                             |                 |   | ć   | n   |                 |  |   |
| 4. 4. |                | Query on swissprot alone | Ol OD    | SWISSPROT AP17 YEAST | SWISSPROT FTR1 YEAST SWISSPROT IM17 YEAST SWISSPROT IM22 YEAST | IM23                    |             | CWICCODOT IIMDI VEAST | http://bssever1/srs6bin/cgi-bin/wgetz?-e+[SWISSPROT-ID:IM17_YEAST] | Back Forward         |             | SWISSPROT:IM17_YEAST | EAST STANDARD: PRT: 158 AA. | P39515; Q02310; | 01-FEB-1995 (Rel. 31, Created)<br>01-FEB-1995 (Rel. 31, Last sequence update) | 15-JUL-1998 (Rel. 36, Last annotation update) | MITOCHONDRIAL IMPORI INNER MEMBRANE I RANSLUCASE S<br>(MITOCHONDRIAL PROTEIN IMPORT PROTEIN 2) (MITOCHO | PROTEIN MIM17). | CIM17 OR MPI2 OR MIM17 OR SMS1 OR YJL 143W OR JO64 |   |
|       |                | uery on s                | MnM      |                      |  |                         |             |                       | tp://bssev   |                      |             | SWISSI               | IM17_YEAST                  |                 |   | •   | E MITOC<br>E (MITO(   |                 | GM TIM17   |   |
|       |                |                          |          | -                    | N 60 <   | - س                     | 9           | <b>⊢</b> ▼            | <b>₹</b>   |                      | l. <u>.</u> |                      |                             | S F             | <u>a b</u>  | ם   | <u> </u>  | 프               | <u>ਰ</u>   | _ |
|       | Deselect       |                          |          |                      | <b>1</b> (3.0)   |                         | 1,14,1      | · (*)                 | 91013  |                      | <u>}</u>    |                      |                             |                 |   | ÷   |   |                 |  | - |
|       | Les Les        | ,                        |          |                      |  |                         |             | ≥                     | ₹0T  | ᅩ                    | BLNE        |                      |                             |                 |   |   |   |                 |  |   |
|       | Submit         |                          |          |                      |  |                         |             | EMBLNEW               | SWISSPROT  | SPTREMBL (S) GENPEPT | SPTREMBLNEW |                      |                             |                 |   | ane   |   |                 |  |   |
|       | Simple<br>mode |                          |          |                      | □ali dbs<br>• □ Metabolic Pathways                             |                         |             |                       | NEW  | EW                   |             |                      |                             |                 | -   | memora  |   |                 |  |   |
|       | S E            |                          |          |                      | ic Pa  | ر<br>ا<br>ا             | و دو        | ر<br>د د              | BANK   | ABLN                 | <b>ABL</b>  |                      |                             |                 | F   |   |   |                 |  |   |
|       |                | <u> </u>                 |          |                      | s<br>stabol  | ransrac<br>  SogBolated | Sequenciare | Sequences             | G GENBANKNEW   | ) PIR<br>) TREMBLNEW | TREMBI      |                      |                             |                 |   | uo!   |   |                 |  |   |
| SRS 🛰 | Stog<br>Stog   | 11                       | <u> </u> |                      |  | $\Box$ (                | ] [         | ]                     | ) <u>(3</u>  | <b>a</b>             |             |                      |                             |                 |   | Description                                   |   |                 |  |   |
| *     |                |                          |          | ō                    |  | 8 8                     | 0           |                       |  |                      |             | V                    |                             |                 | (   | <u> </u>                                      |   |                 |  | = |

The software SRS interface in Detail Mode displaying a completed query and a database entry.

| RDB and text Files [*.rdb and*.txt]          |
|--|
| No file selected                             |
| Existing class Define a new class experiment |
| New class name                               |
| Type of class                                |
| No identifiers File selected                 |
| Add an identifiers file                      |
| Experiment name                              |
| Select a File Import Cancel                  |

Fig.48

| RDB and text Files [*.rdb and*.txt]  |
|--|
| No file selected   |
| Existing class Define a new class experiment                               |
| List of the existing experiment classes                                    |
| dkfz data, average<br>dkfz data<br>tabTestData<br>Ustilago MTP<br>Ustilago |
| Experiment name  |
| Select a File Import Cancel  |

Fig.49

Change configuration dialog box.

| Change configuration        | ×               |
|-----------------------------|-----------------|
| projectspace datasource4 da | tasource1       |
| Imagene                     | cache rdb       |
| querycachedisk              | 100e6           |
| querycachelocation          | /tmp/Xpro_cache |
| querycachememory            | 1e6             |
| OK                          | Cancel          |

Fig.50
Remove experiment class dialog box.

| Remove experiment class    | ×      |
|----------------------------|--------|
| List of experiment classes |        |
| Ustilago MTP               | _      |
| Ustilago                   |        |
| 7SLFCLASSE                 |        |
| do2                        | •      |
| Remove experiment class    | Cancel |

Fig.51
Remove experiments dialog box.

| Remove experiments         |             |               | ×                       |  |  |  |  |  |
|----------------------------|-------------|---------------|-------------------------|--|--|--|--|--|
| List of experiment classes |             |               |                         |  |  |  |  |  |
| Ustilago MTP               |             |               |                         |  |  |  |  |  |
| Ustilago                   |             |               | $\overline{\mathbf{Y}}$ |  |  |  |  |  |
| List of all experiment     | s for the s | elected class |                         |  |  |  |  |  |
| MTP-OD0_5-c                |             |               |                         |  |  |  |  |  |
| MTP-WT-a                   |             |               | <u>(1.2)</u>            |  |  |  |  |  |
| MTP-WT-b                   |             |               |                         |  |  |  |  |  |
| MTP-WT-ave                 |             |               |                         |  |  |  |  |  |
| Remove expo                | eriments    | Cancel        |                         |  |  |  |  |  |

**Fig.52**A point (gene) plotted in three dimensions.

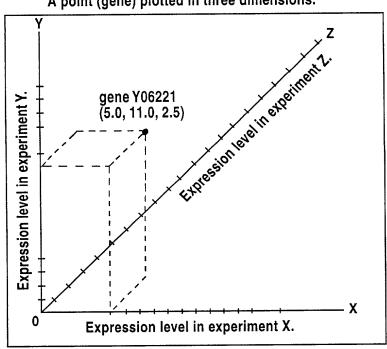


Fig.53

Three experiments plotted in 3 dimensions.

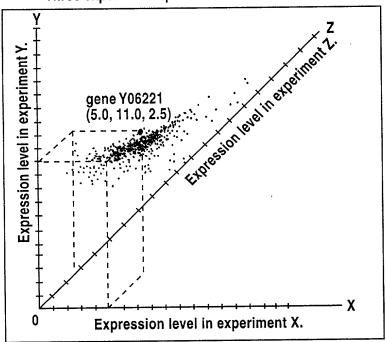
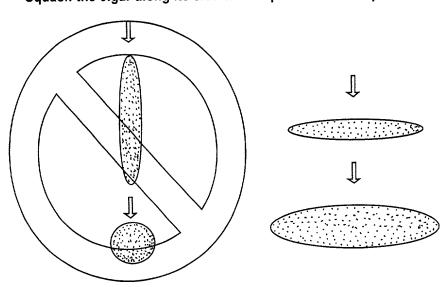
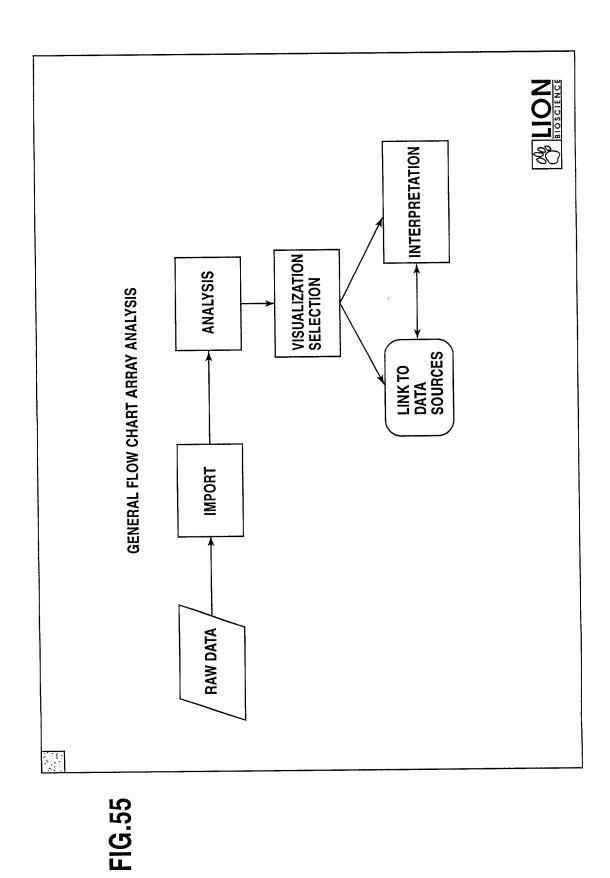


Fig.54

Squash the cigar along its side to best preserve its shape.





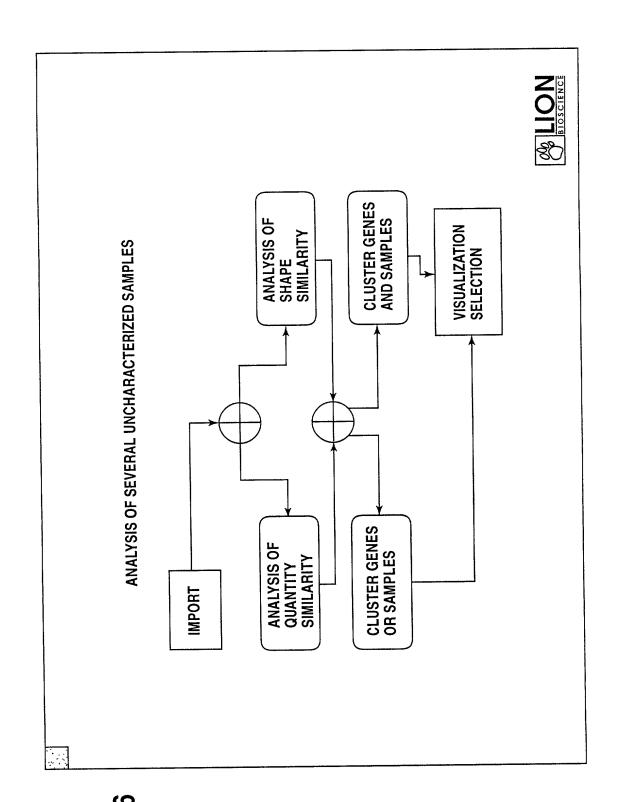


FIG.56

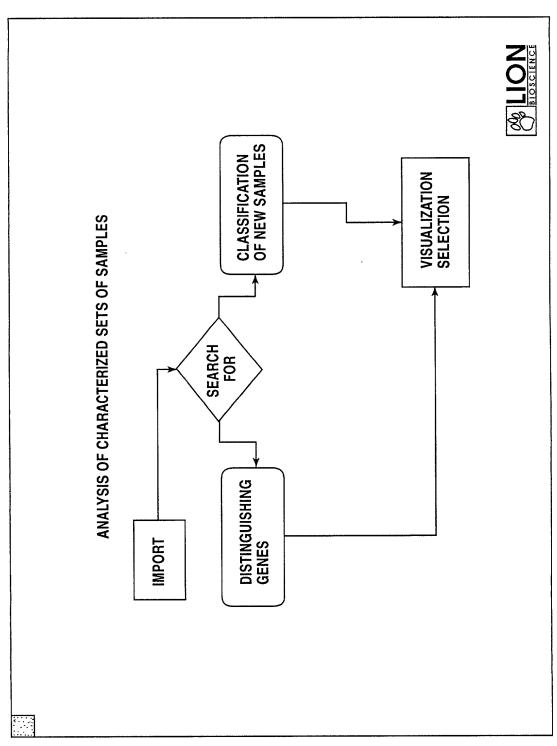


FIG. 57

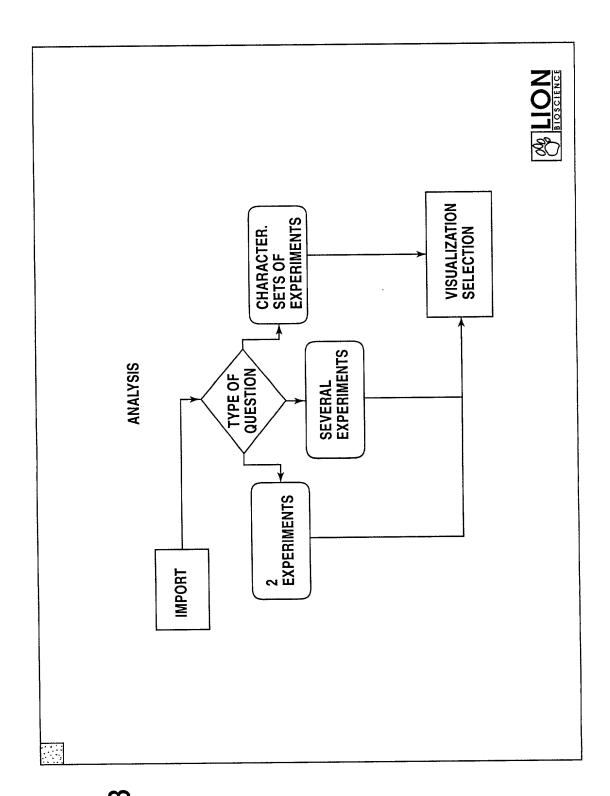


FIG.58

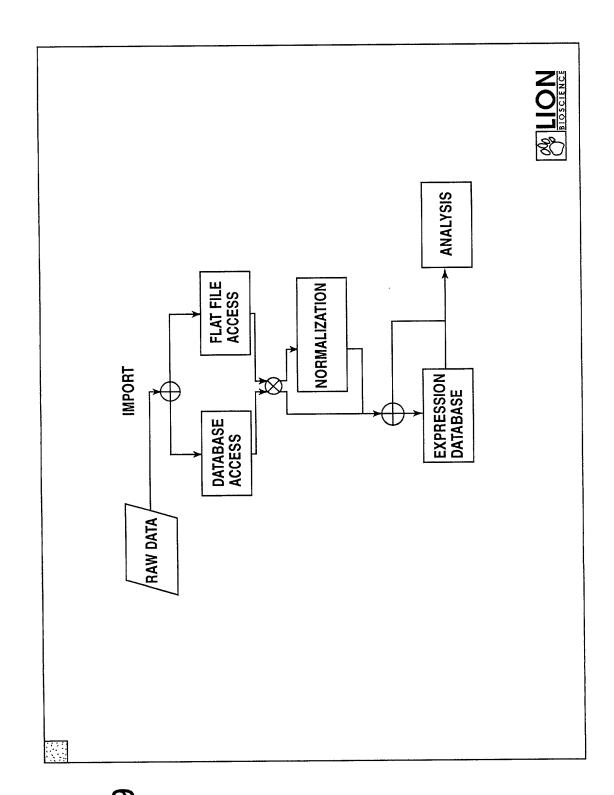


FIG.59

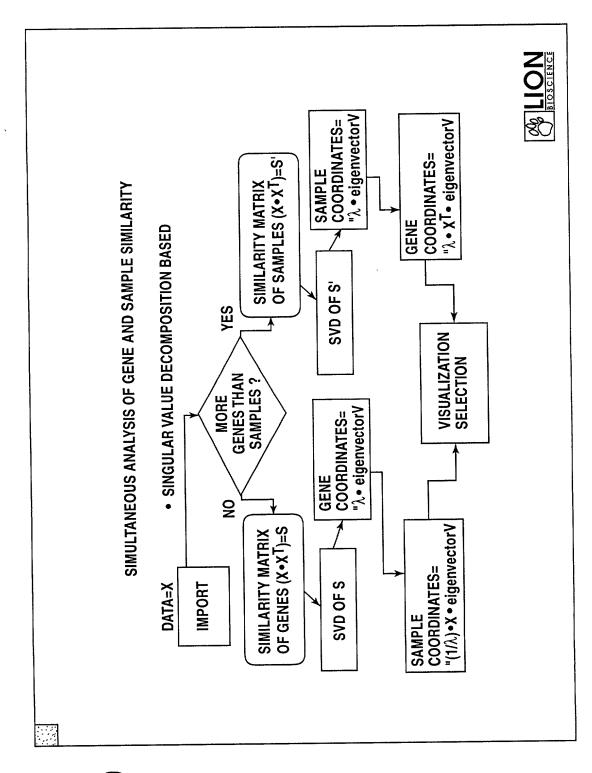


FIG.60

| ×□· | Project navigator for database access  |  | Selected in        |
|-----|--|--|--------------------|
|     | File Edit  Analysis Genes Help    New   Project   Projec | —   Input   — —   —   —   — — —   — — — —   — — — — — — —   Please input a project name   Fibroblast Project   — — — — — — — — — — — — — — — — — — | Gene Description S |

FIG.61

| File Edit Analysis Gen  File Edit File File File File File File File File | Genes Help  Project ExperimentGroup | array SCUOI  Correlation Late Scuoi   Profile   SRS   Pub  From Input   Input | SRS To bi | Create new analyses |
|---|-------------------------------------|---|-----------|---------------------|
|   | Gene                                | ,      <del> </del>   |           | Selected in         |

FIG.62

|  |  | array SCOUT                                    | X  |
|--|--|--|--|
| File Edit Anal                                       | Analysis Genes <u>H</u> elp  |  |  |
| M_Difference M_Va                                    | L.Variance N. Distance 11±Cluster   LLC  | ⊥LCorrelation   hi⊪Classification   hI Profile | srs   Select experiments   10 ans   1726   1 |
| ☐ Projects<br>⊙☐ Bertrand<br>⊙☐ Antoine<br>⊙☐ Angela |  |  | to alialy to   |
| o-☐ Pierre<br>o-☐ fibroblast data<br>o-☐ sebastian   |  |  |  |
| ] [] 🐧   | ict  |  |  |
| 1  |  | dialog   | × 🗆 –  |
| All data<br>Experiment Class 7                       | experiment 0 min experiment 15 min experiment 15 min experiment 1h experiment 2h experiment 2h experiment 4h experiment 6h experiment 8h | * Remove *>                                    | experiment unsync  |
|  |  | OK   |  |
|  |  |  |  |
|  | Gene   | Description                                    | Selected in  |
| % ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (              |  |  |  |

FIG.63

| X 🗆 –      | Compare experiments  |  | ui pe            |
|------------|--|--|------------------|
| arraySCOUT | ot (PCA)   | Data Normalization no normalization ▼  OK Cancel | Gene Selected in |
|            | File Edit Analysis Genes Help    Differen Difference Plot   Projects |  |                  |

FIG.64

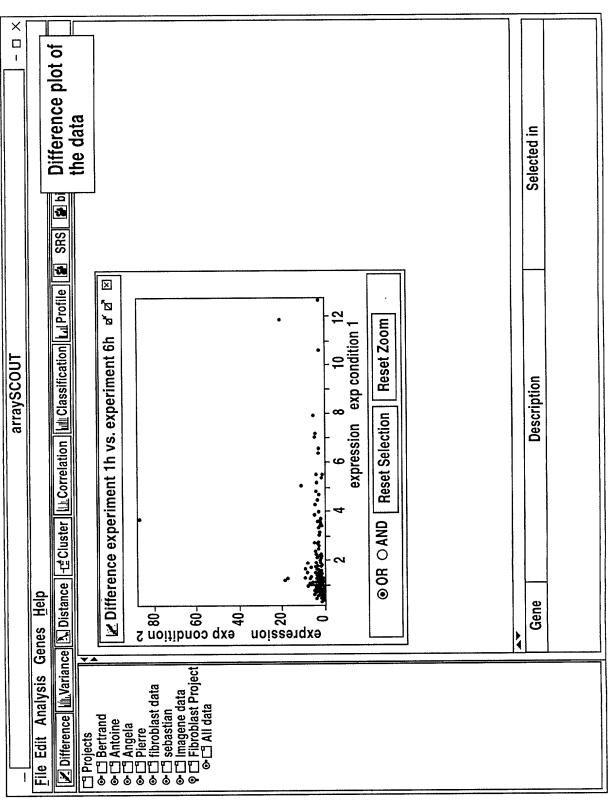


FIG.65

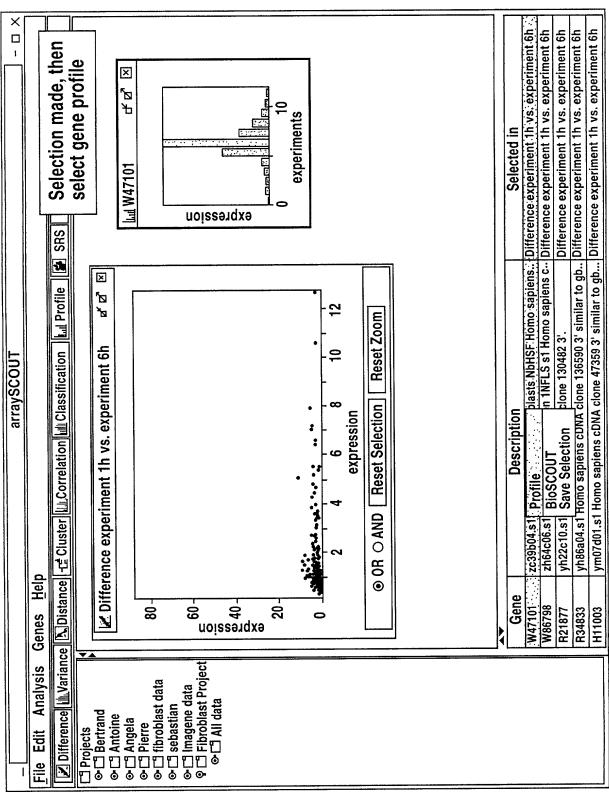


FIG.66

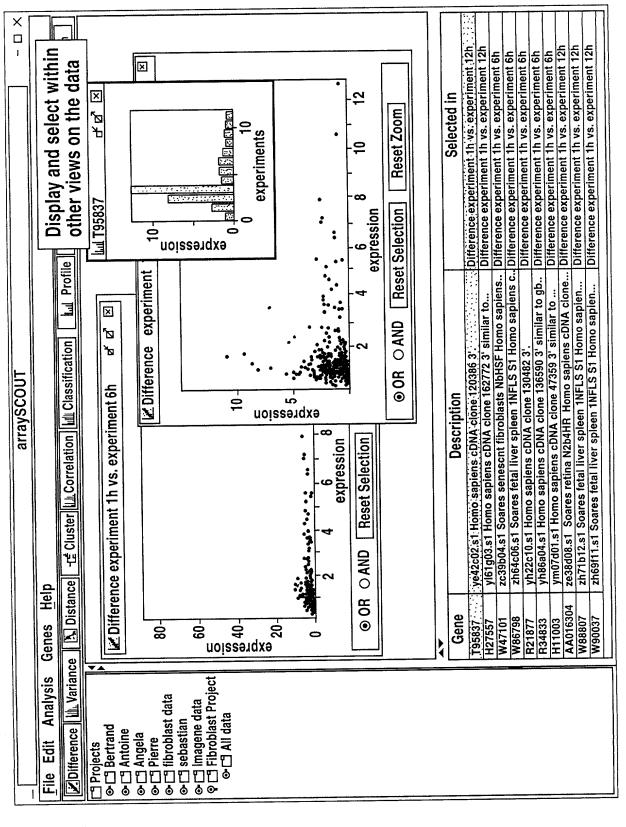


FIG.67

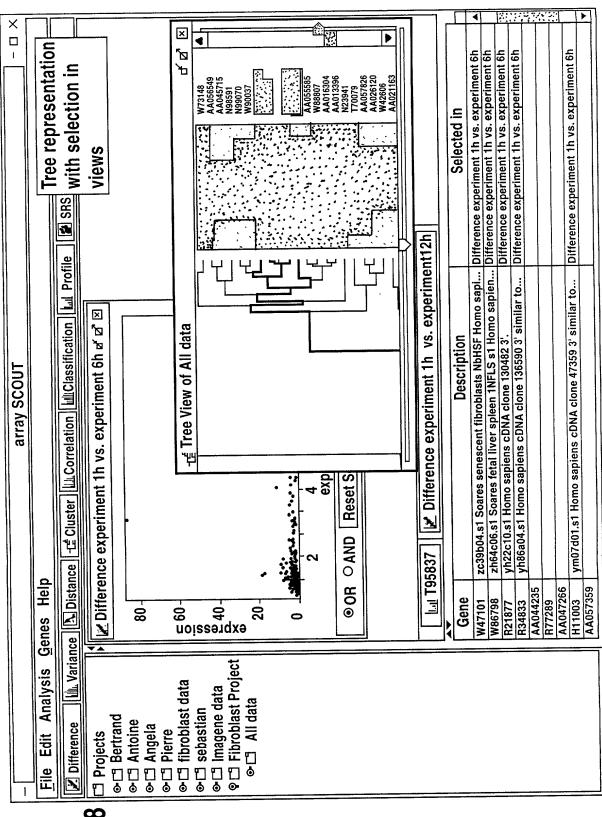


FIG.68

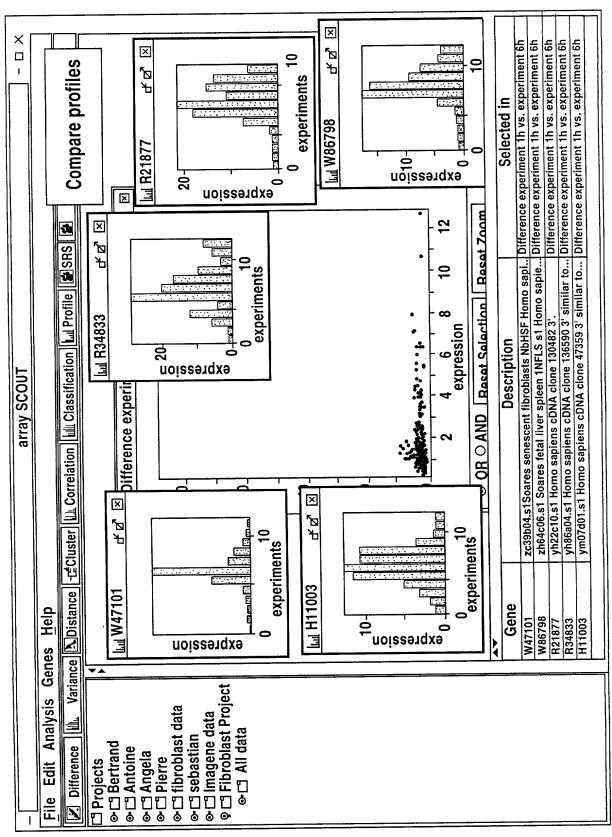


FIG.69

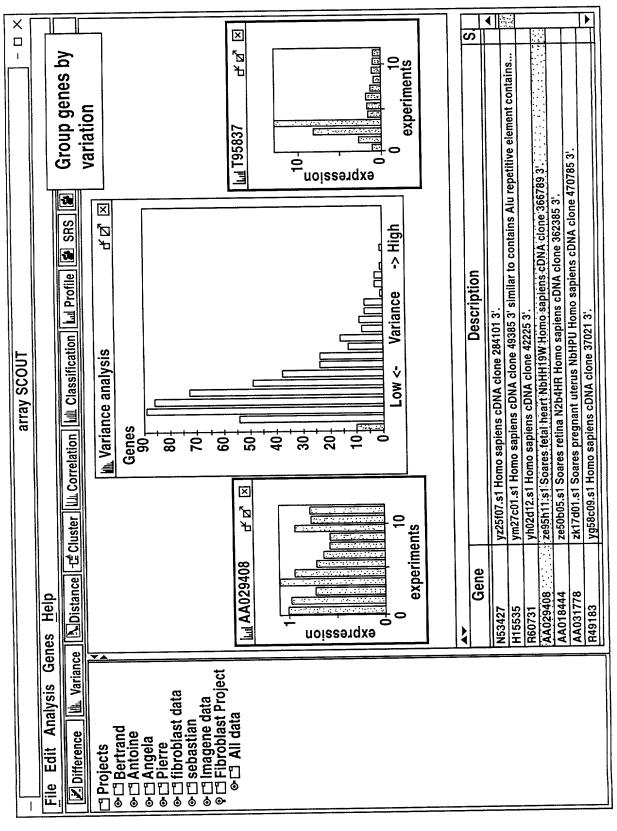


FIG.70

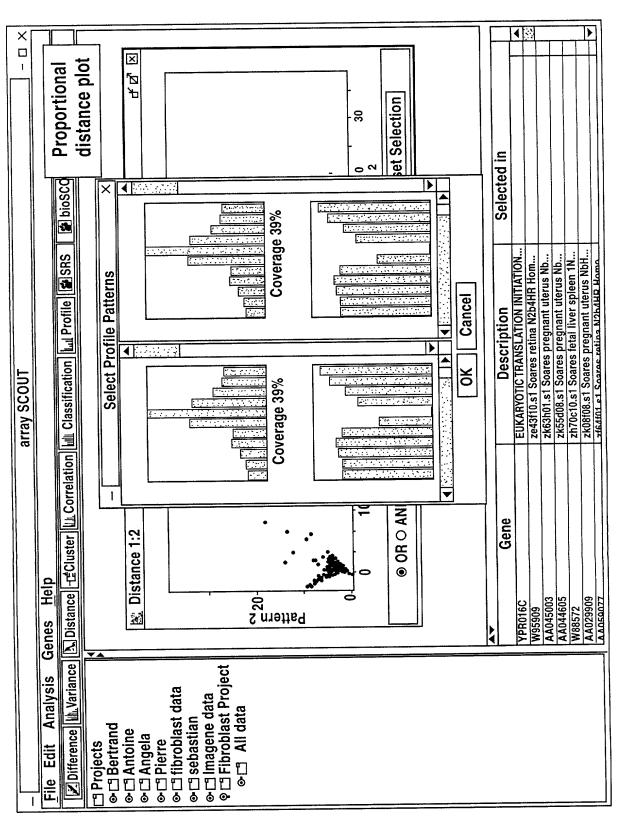


FIG.71

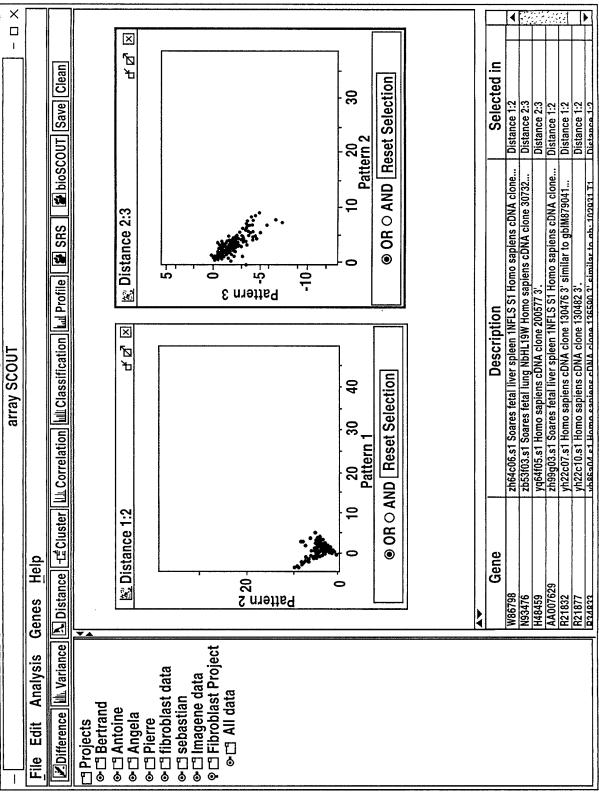


FIG.72

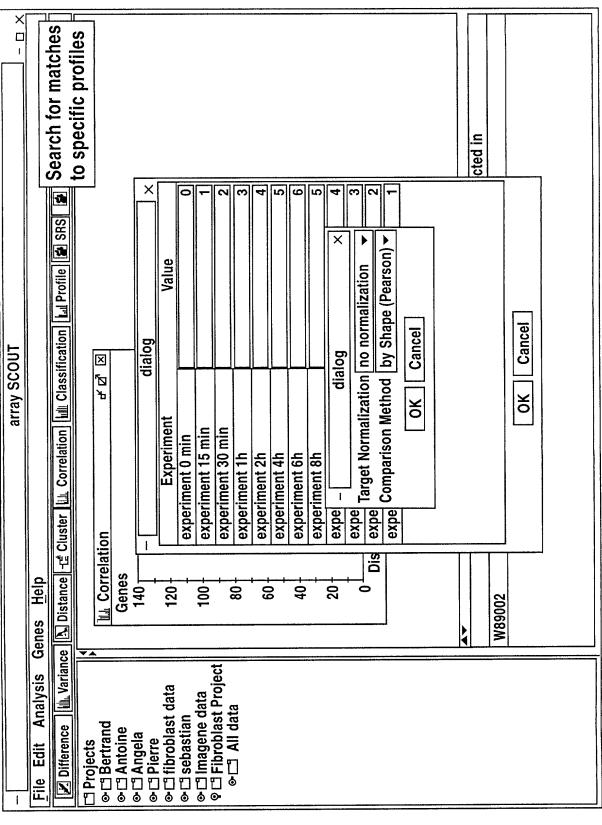


FIG.73

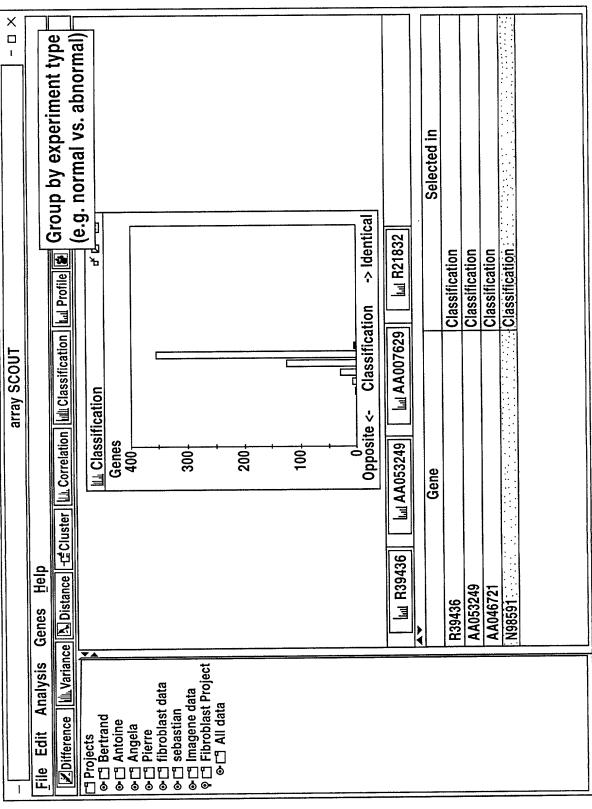
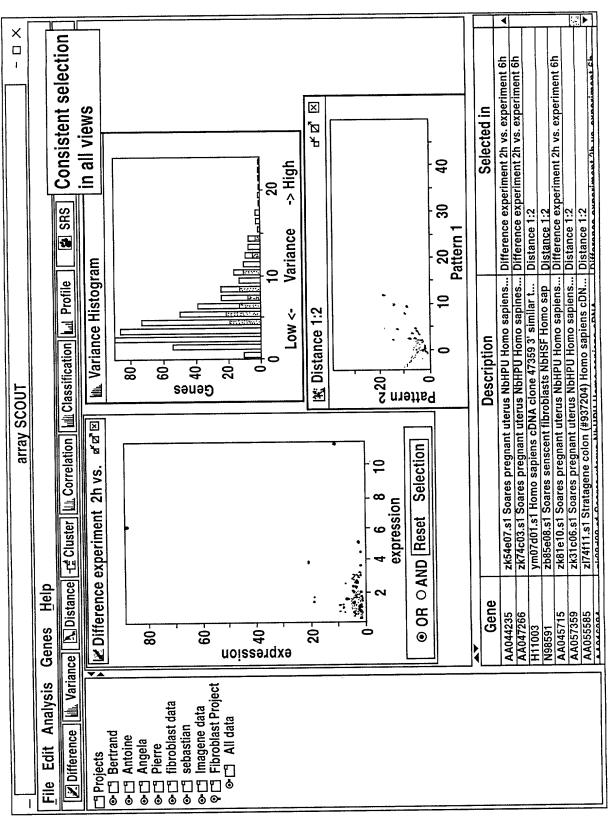


FIG.74



**FIG.75** 

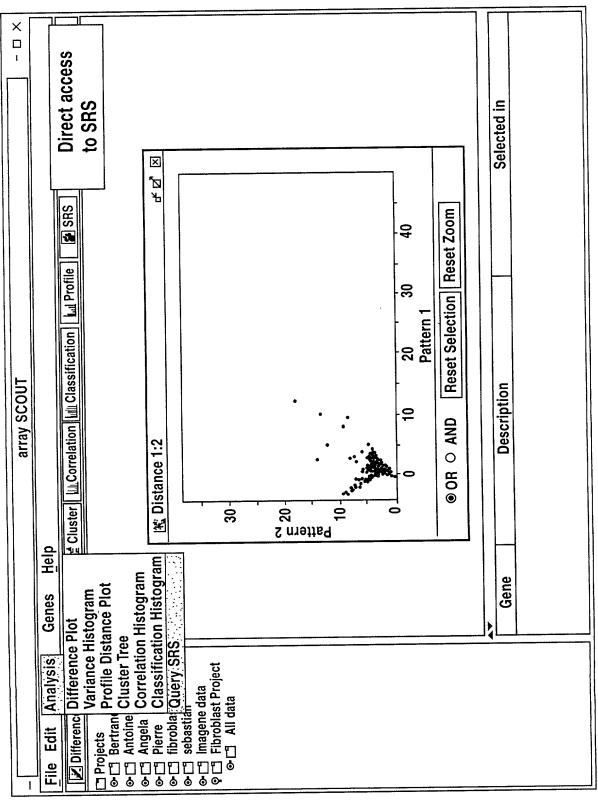
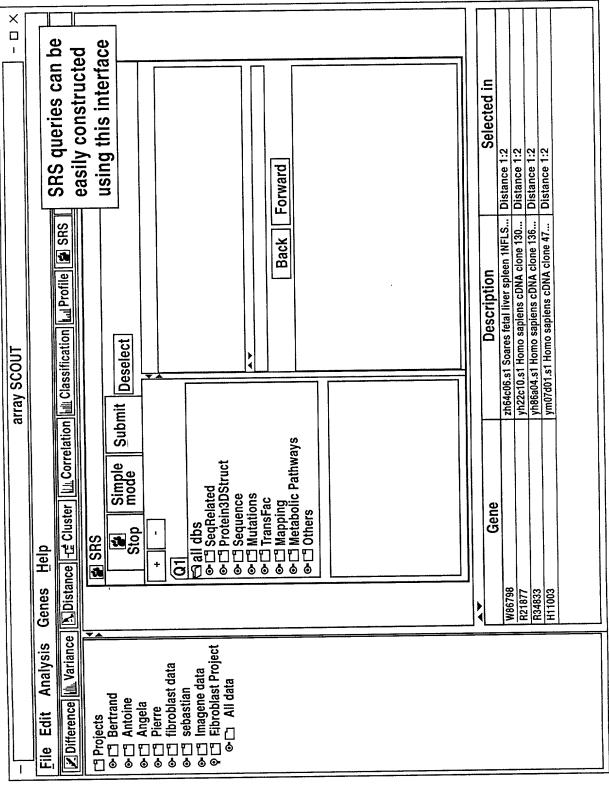


FIG.76



**FIG.77** 

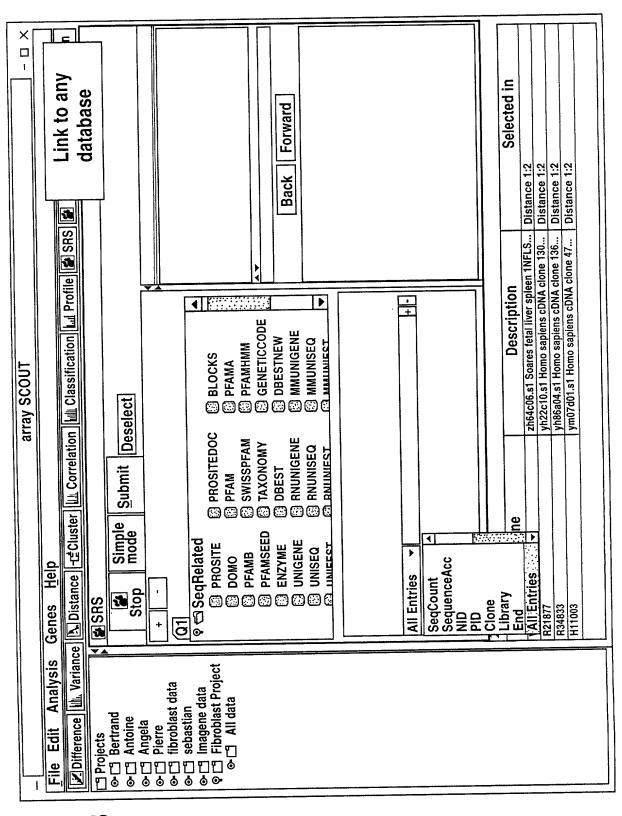


FIG.78

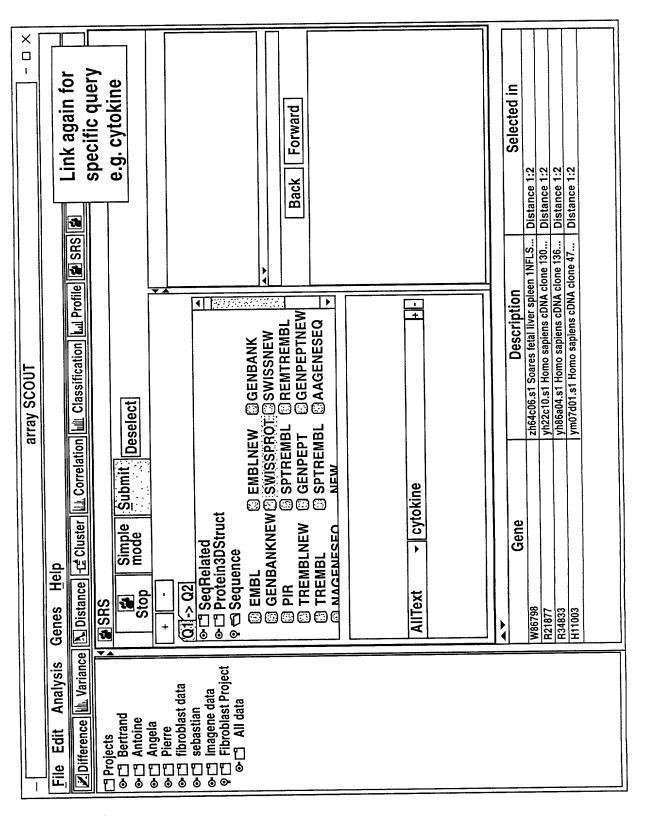


FIG.79

| array SCOUT | er   | e Submit Deselect         | E E E E E E E E E E E E E E E E E E E   | http://bsserver1/srs6bin/cqi-bin/wgetz?-e+[SWISSPROT-ID:SY02_HUMAN]     SPTH | ytokine |              |
|-------------|--|---------------------------|---|--|---------|--------------|
| a           | t Analysis Genes Help<br>ce∭uvariance∭ Distance 1-1≛ Cluster | ☐ Bertrand ☐ Antoine Stop | Related cing and the control of the |  |         | Gene 8 7 7 3 |

FIG.80

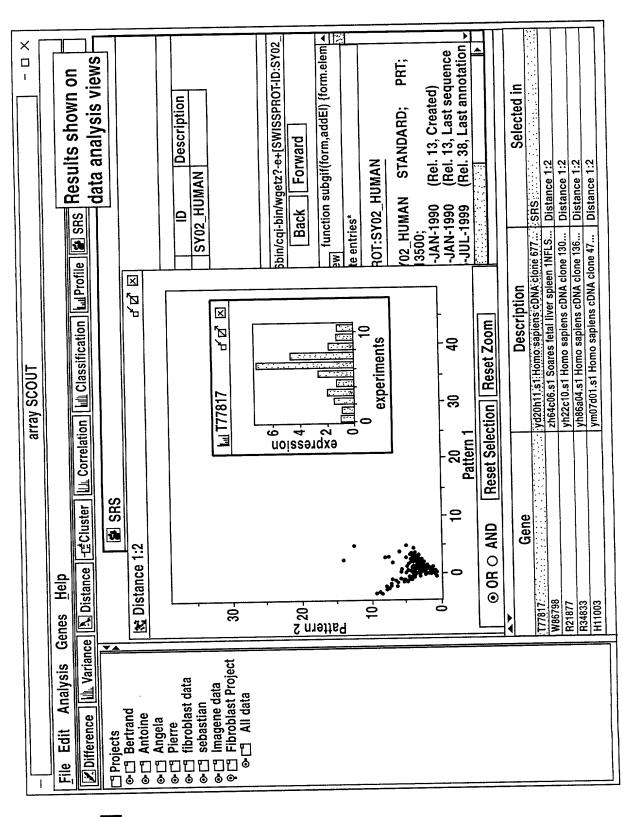


FIG.81

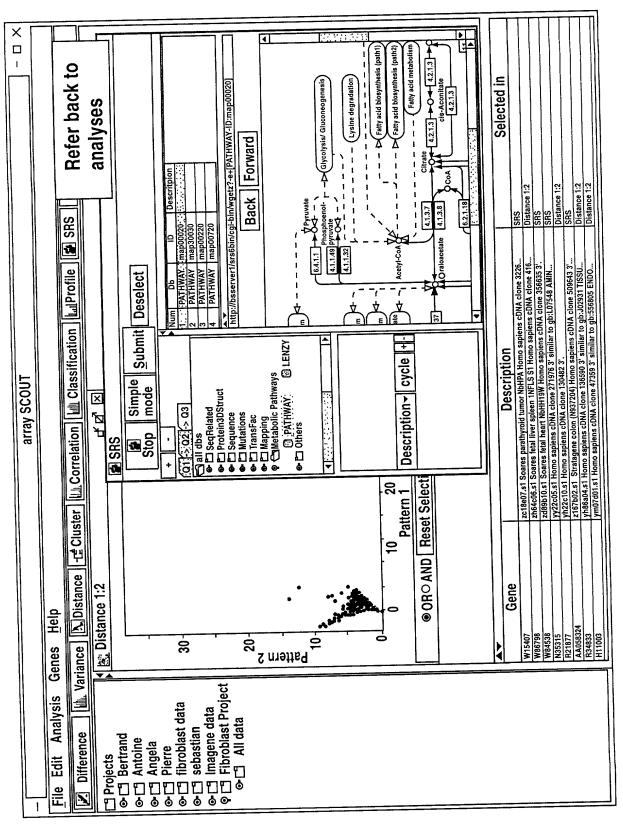


FIG.82

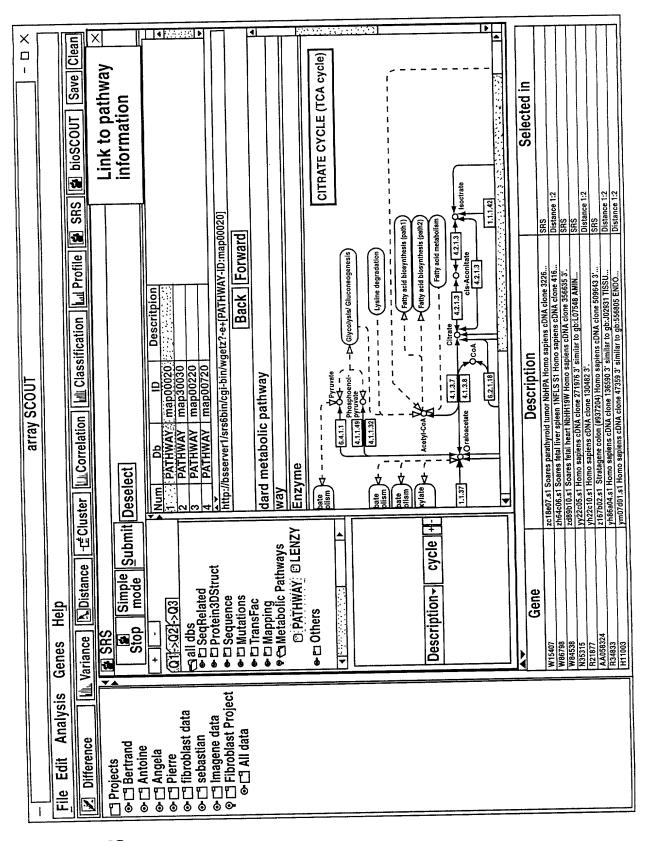


FIG.83